

CLAIMS

WHAT IS CLAIMED IS:

1. A method for interfacing an implicit addressing sequential media device and at least one host compatible with explicit addressing sequential media devices, comprising operations of, responsive to host issuance of explicit addressing media access commands, performing operations comprising converting content of the explicit addressing media access commands to form implicit addressing media access commands and passing the implicit addressing media access commands to the implicit addressing sequential media device.
2. The method of claim 1, the operations further comprising:
responsive to host issuance of device capability queries, reporting to the host that the device utilizes explicit addressing.
3. The method of claim 1, the operations further comprising:
responsive to host issuance of commands other than explicit addressing media access commands, relaying said commands to the device substantially free of any modification.
4. The method of claim 1, the operation of converting the explicit addressing media access commands into implicit media access commands comprising:

3 receiving an explicit addressing media access command including an instruction,
4 address, and data length;
5 removing the address and retaining the instruction and data length.

1 5. The method of claim 1, the operations further comprising, for each command passed to
2 the implicit addressing sequential media device, monitoring a current sequential media address
3 being read or written by performing one of the following operations:

4 examining contents of the host issued commands;
5 querying the device to ascertain current sequential media address.

6 6. The method of claim 5, the operation of converting the explicit addressing media access
7 commands into implicit addressing media access commands further comprising:

1 determining whether repositioning is needed of the device's current sequential media
2 address;

3 if repositioning is needed, prior to the operation of passing the implicit addressing
4 media access commands to the device, issuing a media reposition command
5 to the device.

6 7. The method of claim 1, the operations further comprising, for each host issued
7 command, monitoring a current sequential media address by performing operations
comprising:

4 for each command, determining whether the command involves a number of logical
5 blocks of data;
6 if the command involves a number of logical blocks of data, updating a record of current
7 sequential media address according to the number of logical blocks of data;
8 if the command does not involve a number of logical blocks of data, communicating with
9 the device to ascertain current sequential media address.

1 8. The method of claim 1, the operations responsive to host issuance of explicit addressing
2 media access commands further comprising:

3 queuing host issued explicit addressing media access commands;

4 converting content of the host issued explicit addressing media access commands to
5 form counterpart implicit addressing media access commands;

6 passing the queued implicit addressing media access commands to the device in an
7 order dictated by their explicit addressing counterparts.

1 9. A method of configuring a storage subsystem comprising operations of installing a
2 converter between at least one implicit addressing sequential media device and at least one
3 host configured to communicate with explicit addressing sequential media devices, the
4 converter being programmed to review content of explicit addressing media access commands
5 from the host, convert said content into implicit addressing media access commands, and
6 forward the converted content for execution by the device.

1 10. The method of claim 9, the installing operation comprising placing the converter between
2 the host application and a virtual implicit addressing sequential media device that comprises
3 a non-sequential data storage device and an interface compatible with implicit addressing
4 commands.

1 11. A signal-bearing medium tangibly embodying a program of machine-readable
2 instructions executable by a digital processing apparatus to perform operations for interfacing
3 an implicit addressing sequential media device and at least one host compatible with explicit
4 addressing sequential media devices, the operations comprising, responsive to host issuance
5 of explicit addressing media access commands, performing operations comprising converting
6 content of the explicit addressing media access commands to form implicit addressing media
7 access commands and passing the implicit addressing media access commands to the implicit
8 addressing sequential media device.

1 12. The medium of claim 11, the operations further comprising:
2 responsive to host issuance of device capability queries, reporting to the host that the
3 device utilizes explicit addressing.

1 13. The medium of claim 11, the operations further comprising:
2 responsive to host issuance of commands other than explicit addressing media access
3 commands, relaying said commands to the device substantially free of any
4 modification.

1 14. The medium of claim 11, the operation of converting the explicit addressing media
2 access commands into implicit addressing media access commands comprising:

3 receiving an explicit addressing media access command including an instruction,
4 address, and data length;

5 removing the address and retaining the command and data length.

1 15. The medium of claim 11, the operations further comprising, for each command passed
2 to the implicit addressing sequential media device, monitoring a current sequential media
3 address being read or written by performing one of the following operations:

4 examining contents of the host issued commands;

5 querying the device to ascertain current sequential media address.

1 16. The medium of claim 15, the operation of converting the explicit addressing media
2 access commands into implicit addressing media access commands further comprising:

3 determining whether repositioning is needed of the device's current sequential media
4 address;

5 if repositioning is needed, prior to the operation of passing the implicit addressing
6 media access commands to the device, issuing a media reposition command
7 to the device.

1 17. The medium of claim 11, the operations further comprising, for each host issued
2 command, monitoring a current sequential media address by performing operations
3 comprising:

4 for each command, determining whether the command involves a number of logical
5 blocks of data;

6 if the command involves a number of logical blocks of data, updating a record of current
7 sequential media address according to the number of logical blocks of data;

8 if the command does not involve a number of logical blocks of data, communicating with
9 the device to ascertain current sequential media address.

1 18. The medium of claim 11, the operations responsive to host issuance of explicit
2 addressing media access commands further comprising:

3 queuing host issued explicit addressing media access commands;

4 converting content of the host issued explicit addressing media access commands to
5 form counterpart implicit addressing media access commands;

6 passing the queued implicit addressing media access commands to the device in an
7 order dictated by their explicit addressing counterparts.

1 19. A logic circuit of multiple interconnected electrically conductive elements configured to
2 perform operations for interfacing an implicit addressing sequential media device and at least
3 one host compatible with explicit addressing sequential media devices, the operations
4 comprising, responsive to host issuance of explicit addressing media access commands,

5 performing operations comprising converting content of the explicit addressing media access
6 commands to form implicit addressing media access commands and passing the implicit
7 addressing media access commands to the implicit addressing sequential media device.

1 20. A sequential storage media command converter for use between at least one host and
2 at least one implicit addressing sequential media device, comprising:

3 an input;

4 an output;

5 a digital data processing machine interposed between the input and output,
6 programmed to interface the implicit addressing sequential media device and
7 the host by performing operations comprising, responsive to host issuance of
8 explicit addressing media access commands, performing operations comprising
9 converting content of the explicit addressing media access commands to form
10 implicit addressing media access commands and passing the implicit
11 addressing media access commands to the implicit addressing sequential
12 media device.

1 21. The converter of claim 20, the digital data processing machine being programmed such
2 that the operations further comprise:

3 responsive to host issuance of device capability queries, reporting to the host that the
4 device utilizes explicit addressing.

1 22. The converter of claim 20, the digital data processing machine being programmed such
2 that the operations further comprise:

3 responsive to host issuance of commands other than explicit addressing media access
4 commands, relaying said commands to the device substantially free of any
5 modification.

1 23. The converter of claim 20, the digital data processing machine being programmed such
2 that the operation of converting the explicit addressing media access commands into implicit
3 addressing media access commands comprises:

4 receiving an explicit addressing media access command including an instruction,
5 address, and data length;
6 removing the address and retaining the instruction and data length.

1 24. The converter of claim 20, the digital data processing machine being programmed such
2 that the operations further comprise, for each command passed to the implicit addressing
3 sequential media device, monitoring a current sequential media address being read or written
4 by performing one of the following operations:

5 examining contents of the host issued commands;
6 querying the device to ascertain current sequential media address.

1 25. The converter of claim 24, the digital data processing machine being programmed such
2 that the operation of converting the explicit addressing media access commands into implicit
3 addressing media access commands further comprises:

4 determining whether repositioning is needed of the device's current sequential media
5 address;

6 if repositioning is needed, prior to the operation of passing the implicit addressing
7 media access commands to the device, issuing a media reposition command
8 to the sequential media device.

1 26. The converter of claim 20, the digital data processing machine being programmed such
2 that the operations further comprise, for each host issued command, monitoring a current
3 sequential media address by performing operations comprising:

4 for each command, determining whether the command involves a number of logical
5 blocks of data;

6 if the command involves a number of logical blocks of data, updating a record of current
7 sequential media address according to the number of logical blocks of data;

8 if the command does not involve a number of logical blocks of data, communicating with
9 the device to ascertain current sequential media address.

1 27. The converter of claim 20, the digital data processing machine being programmed such
2 that the operations responsive to host issuance of explicit addressing media access commands
3 further comprise:

4 queuing host issued explicit addressing media access commands;
5 converting content of the host issued explicit addressing media access commands to
6 form counterpart implicit addressing media access commands;
7 passing the queued implicit addressing media access commands to the device in an
8 order dictated by their explicit addressing counterparts.

1 28. A sequential storage media command converter for use between at least one host and
2 at least one implicit addressing sequential media device, comprising:

3 an input;
4 an output;
5 interposed between the input and output, means for interfacing the implicit addressing
6 sequential media device and the host by, responsive to host issuance of explicit
7 addressing media access commands, converting content of the explicit
8 addressing media access commands to form implicit addressing media access
9 commands and passing the implicit addressing media access commands to the
10 implicit addressing sequential media device.